What is claimed is:

1. A two dimensional array comprising molecules bound to a porous material surface; wherein:
   the array contains at least about 100 different molecules; and
   each of the different molecules is bound in a different predetermined region of the surface.
2. The array of claim 1, wherein the porous material comprises alumina and silica.
3. The array of claim 1, wherein the porous material is made from alumina, silica, and boron.
4. The array of claim 1, wherein the porous material is made from a composition comprising about 1% to about 50% by weight alumina, about 50% to about 98% by weight silica, and about 1% to about 5% by weight boron.
5. The array of claim 1, wherein the mean pore diameter of the porous material is greater than about 10 microns.
6. The array of claim 1, wherein the density of the porous material is at least about 6 pounds per cubic foot (96.1 kg/m^3).
7. The array of claim 1, wherein the exposed surface is at least about 50% silicon dioxide.
8. The array of claim 1, wherein the exposed surface is at least about 75% silicon dioxide.
9. The array of claim 1, wherein the exposed surface is at least about 95% silicon dioxide.
10. The array of claim 1, wherein the molecules are oligonucleotides.
11. The array of claim 1, wherein the molecules are peptides.
12. The array of claim 1, wherein the molecules are oligosaccharides.
13. The array of claim 1, wherein the molecules are DNA.
14. The array of claim 1, wherein the molecules are RNA.
15. The array of claim 1, wherein the molecules are proteins.
16. The array of claim 1, wherein the molecules are antibodies.

17. A method for the detection of a target molecule in a sample, the method comprising:

obtaining a two dimensional array comprising molecules bound to a porous material surface, wherein:

the array contains at least about 100 different molecules;

at least one of the different molecules is a partner molecule which binds to the target molecule; and

each of the different molecules is bound in a different predetermined region of the surface;

contacting the array and the sample to produce a partner molecule - target molecule complex; and

detecting the partner molecule - target molecule complex.

18. The method of claim 17, wherein the partner molecule is covalently bound to the porous material.

19. The method of claim 17, wherein the porous material comprises alumina and silica.

20. The method of claim 17, wherein the porous material is made from a composition comprising alumina, silica, and boron.

21. The method of claim 17, wherein the porous material is made from a composition comprising about 1% to about 50% by weight alumina, about 50% to about 98% by weight silica, and about 1% to about 5% by weight boron.

22. The method of claim 17, wherein the mean pore diameter of the porous material is greater than about 10 microns.

23. The method of claim 17, wherein the exposed surface is at least about 50% silicon dioxide.

24. The method of claim 17, wherein the exposed surface is at least about 75% silicon dioxide.

25. The method of claim 17, wherein the exposed surface is at least about 95% silicon dioxide.

26. The method of claim 17, wherein the partner molecule is a peptide.

27. The method of claim 17, wherein the partner molecule is an oligosaccharide.

28. The method of claim 17, wherein the partner molecule is a protein.

29. The method of claim 17, wherein the partner molecule is an antibody.

30. The method of claim 17, wherein the partner molecule is an oligonucleotide.

31. The method of claim 17, wherein the partner molecule is DNA.

32. The method of claim 17, wherein the partner molecule is RNA.

33. The method of claim 17, wherein the partner molecule - target molecule complex is detected by fluorescence.

34. The method of claim 17, wherein the partner molecule - target molecule complex is detected by radioactivity.

35. The method of claim 17, wherein the partner molecule - target molecule complex is detected by visible spectroscopy.

36. The method of claim 17, wherein the partner molecule - target molecule complex is detected by ultraviolet spectroscopy.